INITIAL ASSESSMENT, LANDRY TOMB, DONALDSONVILLE, LA

Chicora Research Contribution 516

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MANAGEMENT SUMMARY

This study briefly examines the 1845 Landry Tomb in Donaldsonville, Louisiana. The tomb is constructed of ashlar limestone with massive diagonally set piers on each corner of the two stage structure. It was placed on the National Register of Historic Places in 1982, but today is badly in need of preservation treatments.

This assessment identified a variety of possible structural defects, including shifted pilasters and foundation cracks. Also present are a variety of stone defects, including delamination and spalling. Much vegetation has been allowed to overtake the structure, especially the pavilion on top. The iron entrance is no longer secure and the interior floor has been significantly damaged.

My first recommendation is for a thorough structural assessment followed by structural intervention as recommended by the engineer. The caregivers, however, must recognize the importance of abiding by the Secretary of the Interior's Standards for Preservation – primarily the need to respect the historic fabric and ensure that the most gentle means of treatment possible are used during the process.

Following structural intervention, vegetation should be removed where possible and treated with an herbicide elsewhere.

Other issues, including stone repair, door repair, and interior floor stabilization can be conducted as a phased program, based on funding availability. I recommend that as little stone replacement as possible be undertaken and that only stone recommended as structurally deficient by the engineer be replaced. As much of the historic fabric as possible should be retained, using a suitable stone repair mortar such as Jahn. Ashlar repointing is typically very difficult and often not of critical importance. A decision should be made concerning this issue once vegetation is removed.

Cost projections are withheld pending the report of a structural engineer.

TABLE OF CONTENTS

List of Figures iv

List of Tables iv

Introduction 1
- *Background* 1
- *National Register Description* 1
- *Previous Assessment* 2

Observations 3
- *North Elevation* 3
- *East Elevation* 3
- *South Elevation* 3
- *West Elevation* 3
- *Door and Interior* 10

Recommendations 11
- *Secretary of Interior Standards* 11
- *Consultation with a Structural Engineer* 12
- *Removal of Vegetation* 12
- *Observations on Stone Replacement* 12
- *Stone Defects* 13
- *Repointing* 13
- *Door Repair* 14

LIST OF FIGURES

Figure
1. Location of the Ascension Catholic Cemetery 1
2. Aerial view of the tomb location 2
3. Undated web photo 2
4. Landry tomb, north elevation 4
5. Landry tomb, north elevation 5
6. Landry tomb, east elevation 6
7. South elevation of the Landry tomb 7
8. Landry tomb, west elevation 8
9. Door and tomb interior 9
10. Interior left of the tomb 11

LIST OF TABLES

Table
1. Secretary of the Interior's Standards for Preservation 11

INTRODUCTION

Background

The author visited the Landry tomb on Saturday, May 16 at the invitation of Ms. Mary Ellen Stinski, one of several individuals spearheading efforts to restore the monument.

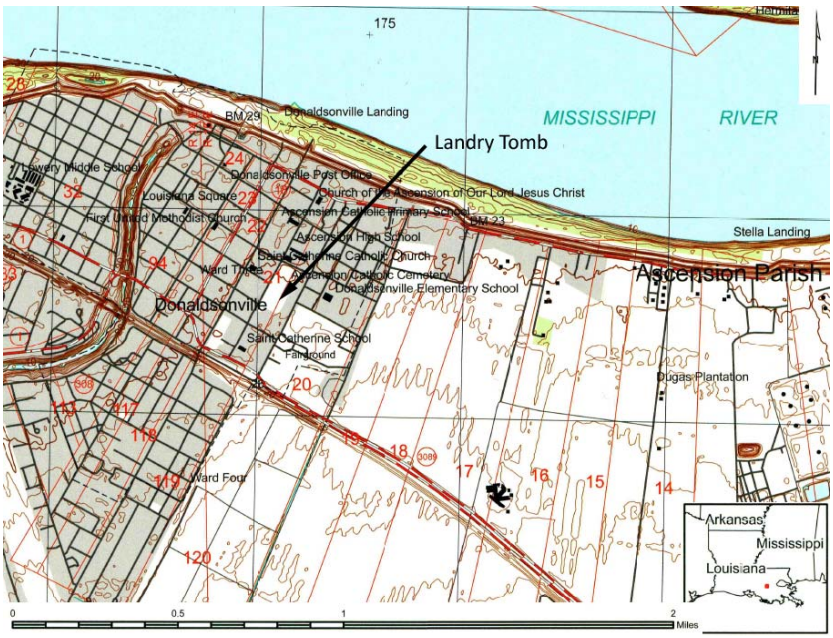

Figure 1. Location of the Ascension Catholic Cemetery in Donaldsonville, LA (basemap is Donaldsonville, LA 2005).

The tomb is situated in the Ascension Catholic Cemetery in Donaldsonville, Louisiana (Figure 1), about 55 miles west-northwest of New Orleans and 26 miles south-southeast of Baton Rouge on the west bank of the Mississippi River. The cemetery is in Ascension Parish and is the largest and among the oldest Catholic cemeteries in the Diocese of Baton Rouge. The cemetery rules may be found at http://www.ascensioncatholic.com/PDF/ACCemetery%20Rules%20Regulations.pdf.

The cemetery is about 6.4 acres with its primary entrance off Opelousas Street to the north. The tomb is found in the southeast corner of the cemetery (Figure 2).

National Register Description

The tomb was placed on the National Register of Historic Places in 1982 and is reported to have been designed by James H. Dakin (1806-1852), a leading antebellum architect with strong ties to Louisiana and the New Orleans area. His Louisiana work includes St. Patrick's Church, the State Arsenal, the Medical College of Louisiana, the University of Louisiana in New Orleans, and the Old State Capitol in Baton Rouge. A substantial collection of his work, including a drawing very similar to the Landry Tomb, is found in the Louisiana Division of the New Orleans Public Library.

The tomb was built in 1845 and is described in the National Register form as,

> A two stage monument constructed of ashlar granite. Set on a heavy base, the lower stage contains the square tomb space, which has 2 severely cut Doric pilasters on each face and a massive diagonally set pier on each corner. Each pier is surmounted by an urn. The second stage is a granite cube

with a 4 pilaster temple front on each face. The walls spread markedly towards the base, which indicates a desire to combine Egyptian characteristics with this essentially neo-classical monument.

Its two stage design with four massive corner piers, urns, and a pavilion top which presents a full pedimented portico on each side represents a much bolder and more ambitious approach to funerary architecture than was common at the time http://www.crt.state.la.us/hp/nhl/parish03/scans/03009001.pdf).

The tomb, however, is not granite, but a limestone of undetermined origin. The pilasters are also neither fluted nor wider at the base, as is typical with the Doric order.

Figure 2. Aerial view of the tomb location in the Ascension Catholic Cemetery.

The entrance is on the north elevation with the tomb interior protected by an inward opening iron gate.

Previous Assessment

We were provided with a previous, but undated, assessment by Chaux Vive Architectural Conservation and Preservation Services of New Orleans. A three stage program was advocated, beginning with structural stabilizations consisting of removing invasive vegetation, cleaning, installing temporary repairs, securing the iron door [or gate], and shifting a pilaster back into position. The second stage would involve replacing deteriorated stone, reconstructing the vault flooring, and consolidation of remaining stone. The third phase would involve non-structural repairs, including repair or replacement of missing decorative features, stucco, limepaint, and replacing missing tablets. No cost was proposed for the work.

The photographs associated with this report provide little detail, although they do indicate considerable vegetation. This extensive growth, however, has not always been so overwhelming. At least one undated photograph found on the web shows the tomb with no evidence of vines (Figure 3).


Figure 3. Undated web photo of the tomb showing it vegetation free (http://kittyfoot.freeservers.com/LandryTomb.jpg).

OBSERVATIONS

North Elevation

Figure 4 shows the north face of the Landry Tomb. This north elevation is the front of the tomb and centered are steps leading to the entrance. Vegetation is found growing from joints in the walls, but is primarily confined to the pavilion top. Condition of the pavilion was not ascertained because of the vegetation and the absence of a lift to allow close examination.

The cornice immediately above the entrance is damaged, with about 2′ missing at the right and additional damage to the left. The ashlar stone is generally in good condition, except at the two corners from about midway down to the ground level. In these areas the stone is spalling. The diagonal pier to the right of the entrance exhibits three split stones. Two have been repaired (or partially repaired) using ordinary Portland cement (OPC). A portion of a third stone is missing, having been replaced with brickwork.

The steps themselves appear to have shifted away from the tomb and reveal an old repair effort using OPC on both the right and left sides in an effort to point the resulting gap. The left side has lost a portion of one stone, while on the right side a similarly displaced stone has been inappropriately and only partially replaced using white Portland cement (Figure 5).

The limestone evidences some atmospheric staining that appears limited to drip and water run-off areas.

East Elevation

Figure 6 shows the east elevation. Vines are very heavy on this side, almost completely obscuring the pavilion top.

The cornice, while intact, shows shifting outward, away from the tomb core, in two locations. In one area the shift is approximately ¾″.

The left pilaster appears bowed and cracked about 3′ up. It has also separated from the wall by about ¾″. The foundation at the base of this left pilaster exhibits a diagonal crack about ½ to ¾″ in thickness, representing both shifting and splitting of one block.

Otherwise stone on this elevation appears to be in generally good condition, with less significant damage at the corners than is seen on the north elevation.

South Elevation

The south elevation at first glance appears unremarkable. It exhibits the same degree of vegetation found on the north and east facades, as well as a similar soiling pattern. Stone damage seems most severe at the corners.

The right pilaster, however, has shifted out at the base about 1¼″. This may be the one shift previously noted by Chaux Vive.

There is also extensive damage to the cornice, with the loss of about a 6′ foot section. Additional damage is seen to the left of this central area of loss.

West Elevation

The west elevation (Figure 8) reveals damage to the upper pavilion, including stone loss. Immediately below this a 7 to 8′ section of the cornice has been lost and there is extensive stone spalling below.

Figure 4. Landry Tomb, north elevation. Top left shows façade; top right shows damage to right diagonally set pier; bottom left shows damage to stones at the corner of the left pier; bottom right shows separation between tomb and steps on the right side.

Figure 5. Landry Tomb, north elevation. Top photo left side of steps showing spalled stone and separation from the tomb. Bottom photo right side of steps showing effort to replace fallen ashlar block.

Figure 6. Landry Tomb, east elevation. Top left shows façade; top right shows shifted and cracked pilaster; bottom left shows foundation crack; bottom right shows shifted cornice.

Figure 7. South elevation of the Landry Tomb. Top photo is the façade. Bottom photo shows loss of the cornice and extensive growth.

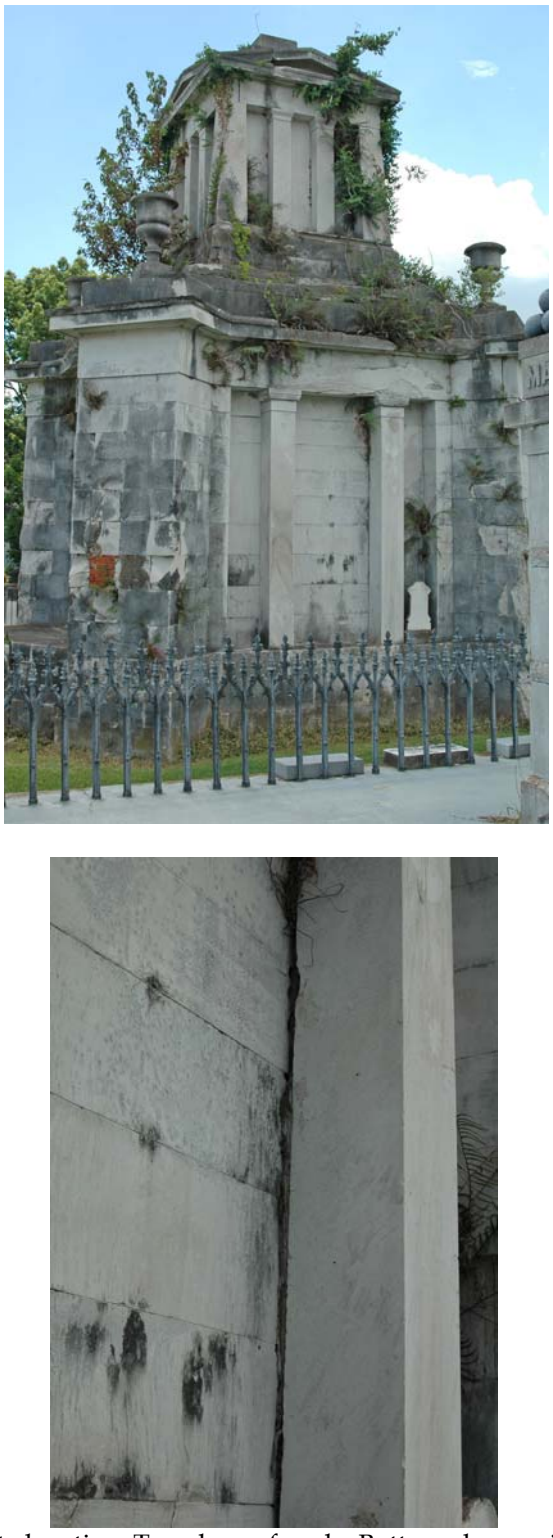

Figure 8. Landry Tomb, west elevation. Top shows façade. Bottom shows pilaster shift in the middle.

Figure 9. Door and tomb interior. Upper left, filigree door from exterior. Upper right, interior view of the rim lock and missing lock keeper. Lower photo showing the interior floor with trash, vegetation, and architectural debris.

The right pilaster is displaced about ¾" at the bottom and about 1" at the top. It, like the others, appears to be shifted by the extensive vine growth originating below.

Figure 10. Interior left of the Landry tomb showing one of the four floor vaults partially open.

Door and Interior

The tomb is guarded by an inward opening iron filigree door that is intact. It exhibits relatively little corrosion and it has been previously painted white. Its closure consists of a rim lock with an exterior knob. The lock keep on the interior of the stone jamb is missing.

The interior floor appears to have contained 4 vaults, with an additional 20 more built into the south wall. While the center two vaults appear intact, the eastern and western vaults appear damaged and partially excavated. The interior floor is scattered with architectural rubble and there is no hint of the original floor. Many, although not all, of the marble tomb plaques are still in place.

Interior roof construction was not well examined, although there were no obvious defects. Interior walls appear to be stucco with whitewash.

RECOMMENDATIONS

Secretary of Interior Standards

The monument, as previously mentioned, is listed on the National Register of Historic Places. As such it is critical that all preservation efforts comply with the Secretary of Interior's Standards. Although there are standards for restoration, we recommend that those used for preservation – defined as "process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property" – be used in this project.

These standards are itemized below in Table 1, but a few points are worthy of special attention. For example, item 2 specifies that historic materials will be retained; item 3 emphasizes that work should focus on stabilizing, consolidating, and conserving the original fabric; and item 6 encourages adequate study to fully understand the condition of the property and reminds caregivers that intervention should be limited, with an attempt to match the original fabric as closely as possible.

Item 7 is especially important – whatever treatments are necessary should use the gentlest methods possible. There should be a constant emphasis on how the treatments can make the smallest possible impression on the structure. One of the easiest ways to comply is to make certain that caregivers retain a conservator subscribing to the ethics and standards of the American Institute for Conservation. Finally, item 8 reminds caregivers that historic properties – especially cemetery memorials – are also archaeological features and some efforts, such as the repair of the tomb's floor, are likely to disturb archaeological remains. Prior to such efforts, additional study is usually necessary.

Table 1.
Secretary of the Interior's Standards for Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

These standards and detailed guidelines for their implementation can be found at http://www.nps.gov/history/hps/tps/standguide/preserve/preserve_standards.htm.

Consultation with a Structural Engineer

Our first recommendation is that the caregivers retain the services of a structural engineer with extensive historic preservation experience. Not only does such an individual have familiarity with historic construction methods, but they will have experience with the Secretary of Interior's Standards. It is absolutely critical that the historic character of the structure not be destroyed in an effort to preserve or protect it. Thus, any recommendations should be compatible with the historic materials.

One such structural engineer is David Fischetti with DCF Engineering, Inc. in Cary, North Carolina (919-467-3853).

He should examine the structure in detail to determine not only the structural condition of the tomb, but also possible methods of correcting any significant structural problems. Structural problems should receive primary attention, although they can – and should be – integrated with other conservation efforts whenever possible.

Removal of Vegetation

If the structural assessment deems it safe to proceed, we next recommend that the vegetation on the structure be removed.

This effort will require an articulated manlift (40' lift; rental is about $800/week not including delivery and pickup). Individual vines and plants should be cut into small sections and manually removed from the tomb. No effort should be made to pull out roots or stems that have burrowed into stone or joints. Instead the stem should be cut and the bark slightly peeled back, allowing the stem to be painted with a full strength glyphosate herbicide (e.g., Roundup Pro ® with 41% glyphosate; this should *not* be applied to the stone itself – only to the stem of the plant).

We note that Roundup has been applied to a 3-4 foot swath around the perimeter of the structure. This creates a situation where the herbicide can migrate into the stone and Roundup is known to cause damage to a variety of soft masonry materials. It also creates a "deadzone" that promotes erosion and splash-back onto the stone foundation. Therefore, we do not recommend continuing this practice.

A better approach would be to till the area around the tomb, ensuring appropriate drainage away from the structure, and establish a suitable turf.

Observations on Stone Replacement

The original Chaux Vive report recommended stone replacement using a material that would weather better than the original limestone (but otherwise matching in appearance). The extent of this replacement was not specified, although conditions mentioned include "cracking, delamination, and sugaring." The report also mentions consolidation (discussed below).

We take a rather more conservative view regarding this matter, although the recommendations of the structural engineer concerning the ability of the ashlar to "support the tomb" are a primary consideration.

An ashlar wall constructed of squared stone blocks is typically stronger than a rubble stone structure. It can, as a result, withstand considerable erosion and damage before stone replacement is usually necessary. In the United Kingdom conservators typically warn building owners to avoid unnecessary stone replacement (there called indent work). Often, once stone replacement is begun it is difficult to know when to stop – and this can lead to dramatic changes in the structure's appearance.

As a general rule, stone replacement should be undertaken only when a stone has decayed to such a degree that it affects structural stability and the overall function of surrounding stonework.

Often a better approach is to use an appropriate infill material for stone repair. Such infill should match the original stone in appearance, color, and physical properties. It should be completely vapor permeable and contain no latex or acrylic bonding agents or additives. One such product is Jahn M70 for limestone, carried by Cathedral Stone (http://www.cathedralstone.com/products/mortars.aspx). This material can be color matched, although the standard S1-LS is a reasonable match for freshly spalled stone and S2-LS is a reasonable match for the exterior soiled color (generally repair mortar is matched to clean stone).

The reported compressive strength for Jahn M70 at full cure is 2,600 to 3,200 psi. Tests conducted in 1991 found Jahn M70 achieved slightly less compressive strength than reported – about 2280 psi. This is an old test and we are not aware of any more recent concerns with the Jahn specifications. Regardless, the achieved compressive strength should not exceed that of the original stone. ASTM C568 characterizes limestone as low, medium, or high density, with compressive strengths ranging from 1,800 to 8,000 psi. We calculate the one small sample we collected to weigh approximately 136 pounds per cubic foot – placing it at the very low end of a medium density limestone.

A good document dealing with the issues of stone replacement can be found at http://www.maintainyourchurch.org.uk/LinkClick.aspx?fileticket=01cHroqKyyE%3D&tabid=57&mid=376.

Thus, we recommend that existing stone be patched wherever possible and stone be replaced only upon recommendation of the structural engineer.

Stone Defects

It appears, based on the spalling, that some of the stone was face bedded, with the stone's layers set perpendicular to the ground (vertical and parallel to the wall). This allows the top layer to fall out or delaminate. Ideally stones are laid naturally bedded, with the layers parallel to the ground or perpendicular to the wall.

There are, however, problems with this ideal. For example, if a cornice is laid naturally bedded there is a risk that the bottom layers might delaminate and fall to the ground. Thus, they are often joint or edge bedded – allowing a mass on either side to keep all of the layers sandwiched together. Even this, however, leads to problems since the stone at the corner of the cornice will be joint bedded on one face or end, but face bedded on the other. The point is that there is often no perfect solution in some situations and deterioration is inevitable.

I also observed evidence of the stone edges spalling or shattering at the joints. This may be an indication of hollow bedding of stones. This was a practice where the edges of blocks taper back from the faces, allowing very fine joints to be achieved. Unfortunately, it can also result in an excessive load being carried near the surface of the stone, with resulting damage.

Repointing

The thickness of mortar in the joints of the very best Ashlar masonry is about 1/8" (or less). The Landry monument uses joints that are typically about 1/16".

Repointing requires a fine mortar without grit aggregate. Either a natural hydraulic lime or lime putty may be used with either fine sand or marble sand to create a mortar suitable for repointing. Regardless, it is critical that "strap pointing" on the surface of the stone be avoided.

If repointing is necessary (and I am not currently sure that it is), care must be taken to avoid damage and the joints raked out to a 3/16" depth and fully packed with mortar using a variety of fine edge pointing irons or tools with the joint being left slightly recessed from the face. The following outlines the recommended process:

1. Only those joints where the absence or failure of mortar is adversely affecting stones or walls or where strong sound mortar is causing decay or is visually disruptive should be repointed.

2. Beds where work is agreed should be raked out using hacksaw blades or other similar instruments, the joints should not be widened or the stone damaged as a result of this process and on no account should mechanical cutters be permitted on fine ashlar work. The joint should be raked out to a depth of 3/16".

3. Twisted wax string should be inserted along the joint by the hacksaw blade at the 3/16" depth.

4. Masking tape should then be placed along each side of the joint to avoid discoloration by action of the lime mortar. The joint should be thoroughly rewetted prior to application of the new pointing material.

5. The mortar should be applied to the joint and pushed in to meet the string backing using a suitably thin implement. Care should be taken that the mortar finishes flush with the ashlar.

6. After pointing the stone should be cleaned down and all traces of masking tape removed.

7. The joint should be rewetted, kept damp, and protected for at least seven days as normal for pure lime work. Any fine hair cracks noted should be worked over during this period.

Door Repair

The existing iron door is in good condition, although its ability to secure the tomb is limited.

A temporary eye bolt can be set in the interior wall and a chain and padlock used. The eye bolt, once removed can be patched over. A more sensitive approach, approach, however, would be to replace the missing lock keeper. Cast iron examples are widely available from antique lock dealers (see, for example, http://houseofantiquehardware.com/s.nl/sc.10/category.163/.f) or one can be readily fabricated to fit existing holes. The existing lock can be removed and repaired by an antique locksmith, although ideally a locksmith may be able to do the necessary repairs on-site. For example, H. Rault Locksmith in New Orleans has some experience with antique materials.

Interior Floor Work

Assuming that there are no structural contradictions, the interior floor can be readily stabilized by cleaning out the vestibule, removing vegetation and trash, and infilling the open holes with clean sand. This will not disturb any of the existing remains (human or archaeological) and will allow the interior to be put into some more reasonable appearance at a relatively low cost. Although it should be considered temporary, this is readily reversible.

Cemetery Preservation Plans

Historical Research

Identification of Grave Locations and Mapping

Condition Assessments

Treatment of Stone and Ironwork

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